REMARKS

Claims 1-8, 11-18 and 21-27 are pending in this application. Claims 1, 12 and 21 are the independent claims. Claims 21-27 stand allowed. By this Amendment, claims 1, 11 and 12 are amended. No new matter is added.

I. Information Disclosure Statement:

Applicants respectfully request acknowledgment of receipt and consideration of JP 2000 234941, a copy of which, along with an English language abstract, was submitted in the Information Disclosure Statement filed on October 19, 2005. Applicants note that the reference has been struck through in the PTO-Form 1449 returned to Applicants indicating that the reference has not been considered. As the reference was properly submitted, Applicants request consideration of the reference or a reason as to why the reference is not being considered.

II. Allowable Subject Matter:

Applicants appreciate the allowance of claims 21-27. Applicants submit that the remaining pending claims are in condition for allowance for the reasons discussed below.

III. Claim Rejections Under 35 U.S.C. §101:

Claims 1-8 and 11-18 are rejected under 35 U.S.C. §101 for allegedly being directed to non-statutory subject matter. The rejection is respectfully traversed.

Specifically, it is alleged that the claims are directed to a machine having process steps and that the alleged process steps are not given patentable weight. Applicants respectfully remind the Examiner that as stated in MPEP §2173.05(g), "there is nothing inherently wrong with defining some part of an invention in function terms...a functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used." Thus, functional limitations are to be given patentable weight even if it is only these limitations that distinguish over the applied reference.

Further, independent claims 1 and 12 are amended to more clearly recite the structure of the claimed device. Therefore, withdrawal of the rejection is respectfully requested.

IV. Rejections under 35 U.S.C. § 112:

Claim 11 is rejected under 35 U.S.C. §112, second paragraph, for allegedly being indefinite. As claim 11 is amended to depend from claim 7, withdrawal of the rejection is respectfully requested.

V. Claim Rejections Under 35 U.S.C. §102:

Claims 1-3, 7, 8, 11-13, 16 and 17 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 3,549,897 to Blake. The rejection is respectfully traversed.

Blake fails to disclose each and every feature recited in the rejected claims. For example, Blake fails to disclose or suggest, an absolute position rotary encoding apparatus...the encoding apparatus being configured to read a first detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the first code track; read a second detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the second code track; and compensate for fluctuations in the code tracks, resulting from the disk being inaccurately mounted, by dynamically shifting at least one of said detector lines on the first area array sensor being read, such that a period length of the imaged pattern along said at least one detector line remains constant, as recited in independent claim 1, or the similar features of independent claim 12.

Blake relates to an electro-optical encoder that provides an output signal that indicates a rotational position of the shaft (col. 1, lines 5-8). In Blake, the encoder has a stationary disc 23 and a rotating disc 22. The disc 22 rotates relative to the disc 23 which remains fixed with reference to the light source 71 and the sensor support 24 (col. 4, lines 5-20; Fig. 2). The rotary disc 22 has concentric annular tracks T1-T15. Each track has a different number of periods and has two photosensors positioned such that their electrical outputs are 90° out of phase to produce a multi-bit signal unique to each angular position of the rotary disc.

Thus, Blake discloses reading recording signals being in different phases with respect to each other (due to the placement of the sensors on a separate cell board 24). In contrast, the rejected claims define an encoder that is configured to read a first detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the first code track; read a second detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the second code track.

Moreover, in Blake there is no disclosure or suggestion of compensating for fluctuations in the code tracks, resulting from the disk being inaccurately mounted, by dynamically shifting at least one of said detector lines on the first area array sensor being read, such that a period length of the imaged pattern along said at least one detector line remains constant.

Although the Examiner alleges that such a feature would be *inherent* in the Blake encoder, under the principles of inherency, the disclosure being relied upon must show that the natural result flowing from the operation of the device would result in the performance being claimed. *Hansgirg v. Kemmer*, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939). Thus, inherency requires that those things will always flow naturally from that which is disclosed in a prior art reference. *Application of Smyth*, 480 F.2d 1376, 1384, 178 USPQ 279, 285 (CCPA 1973).

As there is nothing inherent in the structure of Blake that would provide for dynamically shifting at least one of said detector lines on the first area array sensor being read, such that a period length of the imaged pattern along said at least one detector line remains constant. Thus, the rejected claims are not anticipated.

Claims 1-4, 6, 12, 13, and 15 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 7,060,968 to Leviton. The rejection is respectfully traversed.

Leviton fails to disclose each and every feature recited in the rejected claims. For example, Leviton fails to disclose or suggest, an absolute position rotary encoding apparatus...the encoding apparatus being configured to read a first detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the first code track; read a second detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the second code track; and compensate for fluctuations in the code

tracks, resulting from the disk being inaccurately mounted, by dynamically shifting at least one of said detector lines on the first area array sensor being read, such that a period length of the imaged pattern along said at least one detector line remains constant, as recited in independent claim 1, or the similar features of independent claim 12.

Leviton relates to an optical encoder for determining a position of an object (col. 1, lines 30-35). The encoder includes a scale that coaxially rotates or translationally moves. The scale has a pattern with a plurality of periods that are binnable and is illuminated by a light source. The pattern includes a first portion and a second portion of code bits.

In contrast to the rejected claims, readings from a first and second detector line in Leviton give separate information about incremental and absolute tracks and the image of the scale being binned (i.e., a number of rows and pixels are disposed into a single row called a serial register). Thus, Leviton fails to disclose or suggest an encoder configured to read a first detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the first code track, and read a second detector line corresponding to a row in the pixel matrix comprising the imaged pattern of the second code track.

Further, there is nothing in Leviton that explicitly or *inherently* discloses or suggests dynamically shifting at least one of said detector lines on the first area array sensor being read, such that a period length of the imaged pattern along said at least one detector line remains constant. Although the Examiner alleges that such a feature would be *inherent* in the Blake encoder, there is nothing inherent in the structure of Blake that would provide for dynamically shifting at least one of said detector lines on the first area array sensor being read, such that a period length of the imaged pattern along said at least one detector line remains constant, Thus, the rejected claims are not anticipated.

VI. Claim Rejections Under 35 U.S.C. §103:

Claim 18 is rejected under 35 U.S.C. §103(a) as being unpatentable over Blake or Leviton in view of US Patent 4,714,339 to Lau, et al. (Lau); claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Leviton; and claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over Blake or Leviton. The rejections are respectfully traversed.

Claims 18, 14 and 5 are allowable for their dependency on their respective base claim for the reasons discussed above, as well as for the additional features recited therein.

Further, Lau relates to an apparatus and a laser tracking system for locating a target in three or five dimensions. The system uses photosensors at the tracking point and the target point for determining alignment between a beam incident on a target mirror and a beam reflected from the target. Thus, Lau fails to relate in any way to an absolute optical encoder as recited in Blake or the optical encoder of Leviton. Thus, there is no suggestion or motivation to combine the references as proposed. Moreover, there would be reasonable expectation of success of combining the teachings of Lau with either the teachings of Blake or Leviton.

Finally, Lau fails to overcome the deficiencies of either Blake or Leviton and therefore, withdrawal of the rejections is respectfully requested.

CONCLUSION

In view of the above remarks and amendments, the Applicants respectfully submit that each of the pending objections and rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John A. Castellano, at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By _____ Reg No 35,094

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